GENERAL FISHERIES COUNCIL FOR THE MEDITERRANEAN

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GENERAL FISHERIES COUNCIL FOR THE MEDITERRANEAN

Report of the Twelfth Session

Varna, Bulgaria, 11-15 March 1974

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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DECISIONS, DIRECTIVES AND RECOMMENDATIONS OF THE TWELFTH SESSION OF THE GFCM

Resources Appraisal

- Desirability of acoustic exploratory surveys with several boats (para. 13)
- Preparation, by the Secretariat, of a bibliography on acoustic surveys (para. 12)
- Organization, during the Thirteenth Session, of a debate on acoustic methods of stocks prospection and monitoring (paras. 12 and 75)
- Improvement of exchange of information, particularly with the Mixed Commission for Black Sea Fisheries (Symposium, para. 14)
- Desirability of associating a Soviet expert in the activities of the Working Party on Resources Appraisal and Fishery Statistics (para. 10)

Resources Management

- Setting up of a Committee on Resources Management (RESOLUTION XII/74/3, para. 38)
- Methods of formulating and implementing recommendations on conservation measures (RESOLUTION XII/74/4, para. 42)
- Revision of the 1949 Agreement establishing the GFCM, in order to make it more effective, particularly in the field of conservation (RESOLUTION XII/74/4, para. 42)
- Elaboration of legislations on mesh size with a view to establishing a rational fisheries management regime (RESOLUTION XII/74/6, para. 46)

Fishery Statistics

- Intensification of efforts, at national level, to improve statistics (para. 21)
- Consideration of appointment of a Regional Fishery Statistician (RESOLUTION XII/74/1, para. 25)
- Organization of training courses in the field of fishery statistics and biological sampling (RESOLUTION XII/74/1, para. 25)
- Standardization in the use of vernacular species names (RESOLUTION XII/74/2, para. 28)
- Up-dating of document "A Survey of the Fisheries Statistical Services of Member Countries" (para. 23)
- Convening of a meeting of senior fishery statisticians (para. 24)
- Production, on a regular basis, of bulletin "Mediterranean and Black Sea. Nominal Catches by Species and by Countries" (para. 29)
- Merging of the Working Parties on Fishery Statistics and on Resources Appraisal and Exploitation, under the new title of Working Party on Resources Appraisal and Fishery Statistics (para. 31)

Training of Fishery People

- Study of the possibility of creating a network of training centres, and of establishing a pool of fellowships (RESOLUTION XII/74/5, para. 45)

Aquaculture and Fisheries in Brackish Waters

- Abolition of the Working Party on Aquaculture and Fisheries in Brackish Waters (para. 50)
- Strengthening of the Cooperative Programme of Research on Aquaculture (para. 50)
- Desirability of annual meetings of research workers participating in the Programme (para. 54)
- Desirability of organizing a workshop on the controlled breeding and larval rearing of finfish and penaeid shrimps (para. 53)

Marine Pollution and its Effects on Living Resources and Fisheries

- Expression of support to the work of the Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean (RESOLUTION XII/74/7, para. 61)
- Recommendation that coastal states become parties to the 1973 International Convention for the Prevention of Pollution from Ships and accept as binding its optional annexes III, IV and V (RESOLUTION XII/74/7, para. 61)

- Recommendation that the Mediterranean Sea be declared as a Special Area for the purposes of noxious liquid substances in bulk (RESOLUTION XII/74/7, para. 61)
- Initiation of a cooperative programme on the effects of pollutants and organization of a pilot project for monitoring of selected contaminants (RESOLUTION XII/74/8, para. 70)

Fish Technology

- Study of technological and logistical aspects of preparing a high quality frozen sardine pack (Symposium, para. 32)

Publications

- Process to be followed for the selection of documents to be published in GFCM Studies and Reviews (para. 6)

Symposium in Conjunction with the Thirteenth Session

- The theme of the Symposium will be "Institutional Aspects of Fisheries Development" (para. 74)

Participation of experts in Meetings Organized by the GFCM

- Member Nations are invited to meet the travel and subsistence costs of experts selected in their personal capacity (para. 76)
- Participation in meetings of the Cooperative Programme of Research on Aquaculture will be at Member Nations' own expenses (para. 54)

Chairman and Vice-Chairmen

- Messrs C. Maurin, D. Nedev and A. Demetropoulos were elected Chairman and Vice-Chairmen of the GFCM, respectively (para. 77)

Date and Place of the Thirteenth Session

- 1976, Istanbul (para. 78)

INTRODUCTION

1 The Twelfth Session of the General Fisheries Council for the Mediterranean (GFCM) was held from 11 to 15 March 1974 at Varna, Bulgaria, under the chairmanship of Mr. Z. Ben Mustapha, and with the attendance of the delegates from thirteen out of the eighteen Member Nations, and observers from five international organizations. The list of participants is given in Annex B, page 29.

2 In opening the Session, the Chairman expressed thanks to the Bulgarian authorities for their invitation and the local facilities made available to the participants. Welcome addresses were delivered by Mr. V. Popov, Secretary of the People's Council of Varna, and Mrs. E. Marinova, Vice-Minister of Agriculture and Food Industry; they underlined the importance of the work of this meeting for the development and utilization of the fishery resources, natural or cultivated, and for their protection against the effects of pollution. Finally, Mr. M. Ruivo, Assistant to the Assistant Director-General (Fisheries), FAO, expressed to the Bulgarian Government FAO's gratitude for its hosting the session. After noting the efforts of Bulgaria toward the development of its fishing industry, he outlined the main items which were to be considered by the Session, particularly as regards the exploitation of living resources and their management, their protection against pollution, aquaculture, and fisheries development. He assured the meeting of FAO's willingness to support the GFCM in carrying out the tasks which will be entrusted to it and to take steps which may be needed to broaden its responsibilities to cope with its new duties, including the implementation of management measures decided by Member Nations.

3 The Agenda shown in Annex A, page 27 was adopted.

4 The Session was preceded, from 7 to 9 March 1974, by a Symposium on Economic Problems of the Rational Exploitation of Mediterranean Fishery Resources, the report of which is attached as Annex D, page 37.

5 The Session was divided into seven plenary meetings and ad hoc meetings of working parties on resources, statistics, aquaculture and pollution; a drafting committee also met.

I. REPORT OF THE EXECUTIVE COMMITTEE

6 The GFCM approved the report of its Executive Committee and, in particular, the proposal that papers submitted during the Session and which might possibly be published in a series of the GFCM be no longer submitted to an editorial board. This board, which used to meet during the sessions, had indeed not enough time to study them. Papers will henceforth be selected by the Secretariat according to their merit and their interest for the programme of work of the GFCM; advice on their possible publication will then be sought from the chairmen of interested working parties and a final decision on their publication will be taken by the Executive Committee.

II. RATIONAL EXPLOITATION OF FISHERY RESOURCES IN THE MEDITERRANEAN

(a) Resources appraisal and exploitation

7 At its Eleventh Session (Athens, 6-11 March 1972), the GFCM had requested that the Working Party on Demersal Resources Appraisal and Exploitation extend its range of activities to include a study of the commercial stocks of the eastern basin of the Mediterranean, including the Black Sea, and that it proceeds to an analysis of the pelagic resources of major economic importance. As a consequence, its title was altered to "Working Party on Resources Appraisal and Exploitation". In accordance with the above request, the Working Party held a Fifth Session in the FAO Department of Fisheries, Rome, 17-19 December 1973, which was specifically devoted to an analysis of the state of the resources of the eastern basin of the Mediterranean and of the Black Sea.

8 The Secretariat presented the results obtained on this occasion and contained in document GFCM/XII/74/5.[1] It also referred to a survey on the state of the marine resources of the Mediterranean and the Black Sea[2] which provides a synthesis of the present knowledge regarding the potentials of the resources of the Mediterranean and the Black Sea and their actual state of exploitation. Noting the value of this study on a regional level, the GFCM requested that it be periodically updated by the Secretariat and submitted to the future Sessions.

9 The working party treated separately the Black Sea and the eastern basin of the Mediterranean, but in both areas its work suffered from the shortcomings, in both quantity and quality, of the fisheries data available. Up to the present time, this situation has not been detrimental to the management of the fisheries since most of them have remained rather stable during the last years. It is clear, however, that a better knowledge of potentials would permit a better estimation of the possibilities for increasing fish catches and for improving the profitability of the exploitation of the most heavily fished stocks.

10 With regard to the eastern basin of the Mediterranean, the acquisition of such knowledge implies the availability of fishery biologists with a clear understanding of all the problems related to the regular collection of minimum basic data needed for stocks evaluation. As for the Black Sea, this condition is better satisfied. The substantial knowledge already available is, besides, periodically synthesized by coastal countries and the work of the Mixed Black Sea Fisheries Commission was reminded in this context. However, up to the present time, not all the countries exploiting the stocks of this sea have taken part in such syntheses. A full participation is, nevertheless, essential when it is realized that the four coastal states, in the main, exploit the same stocks. With this in mind, and taking into account the importance of Soviet fishing and scientific activities in this sea, the GFCM expressed the wish that a Soviet expert may, in the future, be associated to the activities of the working party.

(i) Situation in the eastern Mediterranean

11 The data available for evaluation purposes suffer, in general, from three types of limitations:

(a) they are in insufficient detail, particularly with regard to breakdown by species, geographic area of capture, measurement of fishing effort and structure of stocks and catches (age and length)

(b) time series are not long enough to permit analyses of changes, in the nature and composition of stocks, resulting from changes in exploitation

(c) the effort devoted to the collection of data does not always correspond with the relative importance of the various fisheries.

12 Since the improvement of statistical collection systems is a long process, it was recognized that it would be advisable to take advantage of special surveys, either with classical fishing gear or using acoustic techniques, or on eggs and larvae, to rapidly appraise fisheries expansion possibilities or to monitor the abundance and distribution of stocks. The execution of such surveys should therefore be encouraged. It was noted that, for interpreting in terms of capture potentials, the values of ichthyomass obtained from quantitative acoustic surveys, a good knowledge of catches already made by existing fisheries from the stocks under study was necessary. The GFCM was therefore of the view that the organization of a seminar on the different methods of prospection and monitoring of the stocks of the

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1/ The list of documents is given in Annex C, page 35

2/ D. Levi and J.-P. Troadec. The fish resources of the Mediterranean and the Black Sea. FID:PPM/74/Inf.5, January 1974. Document prepared for the Consultation on the protection of living resources and fisheries from pollution in the Mediterranean, Rome, 19-23 February 1974

Mediterranean and Black Sea, and their respective advantages, could make a useful contribution to the dissemination of knowledge on this subject and to fruitful exchanges of experience. Several exploratory acoustic surveys have already been undertaken or are being initiated in various parts of the Mediterranean, particularly in France, Italy, Spain, Tunisia, Turkey and Yugoslavia. The need to ensure a better dissemination in the region of information on methodology was recognized and the Secretariat was requested to prepare and distribute to interested laboratories a bibliography of the main documents dealing with theoretical aspects, practical applications, and methods of interpretation of the results. The possibility of training in this field offered by the courses organized every two years by FAO and the Norwegian Agency for International Development (NORAD) was brought to the attention of the participants. It was also mentioned that developing countries can benefit within the framework of the United Nations Development Programme (UNDP) of the assistance of the FAO acoustic expert.

13 Several countries possess, or will soon possess, equipment necessary for these cruises. Given the amplitude of the range of the stocks, particularly pelagic, along the Mediterranean coasts, it would be very useful to envisage the joint organization, in sufficiently large sectors, of exploratory surveys undertaken by several boats. In offering to Mediterranean specialists opportunities of boarding research vessels, such surveys would permit further strengthening of their training in this discipline.

14 The working party, when comparing the capture per unit surface area for the different sectors of the eastern basin of the Mediterranean, developed some hypotheses on the relative intensity of exploitation and perspectives for fisheries expansion in various sectors. In general, pelagic production is low in comparison with demersal catch. If in certain sectors (e.g., Cyprus) this situation might be the result of a low pelagic potential - a weakness allied to the local paucity of local waters in nutritive salts - it is probable that in other sectors the relatively small catches of pelagic species are a result of a low level of fishing intensity. For example, one may think that Turkish pelagic fishing in the Aegean Sea could be intensified. It was noted that heterogeneous distributions of pelagic species are known to exist in other regions of the Mediterranean, for example, off the Spanish coast where stocks are more concentrated in privileged locations, as off the mouth of certain rivers. With regard to the status of the stock of sardinella living off the Nile Delta, it was indicated that the effects of the construction of the Aswan Dam on them had been studied by Egyptian research workers. In addition, interesting concentrations of sardinella have been localized off the frontier between Egypt and Libya. The comparison of the quantities of pelagic species captured suggests that the present catch in the eastern sector, extending from Greece to the Libyo-Tunisian border, might perhaps be increased by two or three times, if the economic obstacles to their marketing could be overcome.

15 In the case of the demersal fishery, similar comparisons led to the conclusion that the potentials of the eastern and southern coasts of the eastern basin of the Mediterranean could support some expansion of the fishery, above all in the African part of the sector. On the Cypriot continental shelf, the rate of exploitation by trawling would seem to fall in the area of maximum production of the pertinent stocks. On the other hand, it is likely that waters in which the artisanal fleet operates could support a heavier exploitation allowing, as a first approximation, an increase of about twice the present catch. It was stated that the observed decrease in catch of shrimp by the Egyptian fleet might result from the too intensive exploitation of the juveniles in coastal areas and lagoons, and that the control of fishing on the juveniles could therefore result in a recovery of the yield.

16 Mention was made of the perspectives offered by the resources of the continental shelf of the western basin of the Mediterranean, the exploitation of which is facilitated by precise bathymetric records. Fishing for shrimp, which constitutes one of the major resources

of these bottom areas, can be carried out efficiently by gear other than trawl when the latter cannot be used. Thus, around the Balearic Islands catches of 80 to 200 kg per boat per night have been obtained fishing for shrimp (Plesionika) with traps. There was a question whether similar perspectives also exist in the eastern basin. In this respect, it was noted that trawling surveys carried out on the shelf off the African coast in the eastern basin showed that catches, which are good off Tunisia, decrease heavily to the east.

(ii) Situation in the Black Sea

17 This sea is characterized by the predominance of pelagic species over demersal ones. The latter, although they are much more heavily exploited than the former, provide for the time being only 10 percent of the catch as they are less abundant. Amongst the pelagic stocks capable of supporting any appreciable increase of fishing are the sprat (Sprattus sprattus), the horse mackerel (Trachurus trachurus) and the anchovy (Engraulis encrasicolus). During the winter of 1972-73 there was recorded (by quantitative echo sounding) along the Turkish coast a biomass estimated at one million t of anchovy and 500 000 t of horse mackerel. The catch for the whole of the Black Sea - about 100 000 t for anchovy and less for horse mackerel - appears to be much lower than the maximum fraction of this biomass that one could expect to catch regularly.

18 The pelagic stocks are subject to important long-term fluctuations. They affect, in particular, bonito (Sarda sarda), mackerel (Scomber scombrus) and bluefish (Pomatomus saltator), the catches of which have fallen heavily in recent years, particularly on the western shores of this sea. The causes of these variations were discussed at length. Bulgarian data, which cover almost a century, show the existence of a long periodic cycle in the catches of these species. This, and information on feeding habits, indicate that these fluctuations might be the result of the existence of predator/prey relationships between certain species such as bonito and mackerel. It was observed that there was some suspicion that pollution could possibly be responsible for the heavy reduction in yields of mackerel and bonito in recent years. In such a case, a strict control on the discharge of noxious substances would be essential.

(b) Fishery statistics

19 When introducing the Report on the GFCM Programme for Fishery Statistics (GFCM/XII/74/8), the Secretariat, besides underlining the main aspects of recent activity in the field of fishery statistics, also attempted to place this activity in a wider perspective and so draw attention to other problems of interest. In general, it can be said that in the matter of the development of regional fishery statistics there are three main areas of activity:

(i) the production within each country of the required statistics

(ii) the reporting of these statistics to a regional body

(iii) the compilation of the received statistics by the regional body and the production of regional bulletins and other material required for fishery studies.

20 Looking at the first stage, it was noted that a country establishes a national fishery statistical system to satisfy all the requirements of its administrators, economists, stock assessment workers, etc. The production of statistics for regional purposes is but one concern amongst the many, albeit a very important one, which are taken into account when establishing or improving a national system. It was further observed that, when considering the ability of national fishery systems of the region to provide statistics required for either national or regional purposes, it was necessary to remember that whilst in the case of developed countries the technical ability to design and implement all required surveys was

available,this was not the situation in developing countries where there was a lack of adequately trained staff to design surveys and undertake the field and officer operations.

21 The GFCM recognized that in general one of the major obstacles to improving knowledge on the stocks is found at the level of the production of statistics needed for appraisal purposes and recommended that the effort at present being made at national levels be intensified. It also approved proposals of a joint ad hoc meeting of the Working Party on Fishery Statistics and the Working Party on Resources Appraisal and Exploitation, which took place during the course of the Twelfth Session, concerning the sort of action that might be taken to accelerate progress (see Annex E, page 47).

22 It was noted that in several countries, some with important fisheries, the various institutions responsible for the production and interpretation of statistics are often loosely connected with their respective responsibilities insufficiently defined and integrated. This situation makes it extremely difficult to collect and compile regularly a minimum of statistics on all the national fleets and their catches. With this in mind, the GFCM was of the opinion that it could offer some aid to governments:

(i) by drawing their attention to the advantages, particularly economic, which would result from improving national systems for the collection of statistics. Indeed, quantitative information is essential for the provision of scientific advice needed by administrators for developing and managing fisheries.

(ii) by undertaking a synoptic analysis of national fishery statistical (including biological data) systems, drawing attention to the advantages and disadvantages of each system.

23 With this in view the GFCM recommended that the Secretariat, in close collaboration with Member Nations, undertake the updating of the document "A Survey of the Fisheries Statistical Services of Member Countries", presented to the Ninth Session (1967) of GFCM under reference GFCM/9/67/5E. This document, once revised, could then be addressed to the various laboratories and institutions in each country concerned with the interpretation of provided statistics, asking them to express their views on the national fishery statistical systems.

24 The information thus assembled should then serve as the basis for convening a meeting of senior officials responsible for the organization and coordination of the collection and processing of statistics in GFCM Member Nations. The terms of reference of the meeting should be to establish, starting from a review of needs, the improvements that could usefully be introduced into national systems.

25 As noted in paragraph 20, it was recognized that the developing countries suffer from lack of technical expertise in the field of fishery statistics. The GFCM at its previous session had already drawn attention to this problem and the need for training courses at all levels. On this occasion, however, it was noted that consideration should always be given to introducing provision for work on statistics and other required fishery data (e.g., biological) in any fishery project for which FAO is the executing agency (undertaken either within the United Nations Development Programme, or under other sources of funds). In addition the GFCM was of the view that the appointment of a Regional Fishery Statistician, as in other fishery regions of the world, would constitute an important step to raising the level of fishery statistics in the GFCM area. The following resolution was subsequently passed:

RESOLUTION XII/74/1

The Twelfth Session of the GFCM,

Recognizing the need for the development of national fishery statistics systems capable of producing statistics required for the administration, development and management of national and international fisheries in the area at a minimum cost,

Recommends

- that special consideration be given to the appointment of a Regional Fishery Statistician for the GFCM area, working in close collaboration with the Fishery Statistics Unit and the Fishery Data Centre of FAO to advise and assist countries, as necessary, with the design of required surveys and their implementation, including the training of officers needed for the supervision and field operations of the surveys and for the production of technical reports

- that the Secretariat continue investigating the possibility of organizing training courses in the field of fishery statistics and biological data.

26 Consideration was then given to the reporting of statistics by national offices to FAO. To date the Working Party on Fishery Statistics had dealt with:

(i) the reporting of catch by sub-area and by species

(ii) the reporting of vessel statistics

The development of a system for the standardization of reporting catch statistics by sub-area and species requires an agreed sub-area breakdown and a regional list of species for statistical purposes. It was noted that during the period preceding the current Session of the Council, a survey had been carried out by the Secretariat to test the applicability of an area breakdown and species list which had previously been proposed by the Working Party on Fishery Statistics. A report on the test survey had recently been sent to members of that working party and also of the Working Party on Resources Appraisal and Exploitation (see Annex E, page 47).

27 It was reported that a survey had also been undertaken by the Secretariat to test the applicability of a system for collecting vessel statistics and that a report of the results of that survey had been made available to members of both the working parties mentioned above (see Annex E, page 47).

28 Reference was then made to the publication "Species Identification Sheets for Fishery Purposes (Mediterranean and Black Sea)", the relevant working document being GFCM/XII/74/9. The GFCM welcomed this publication as a very valuable document. It urged Member Nations to continue giving full support to it, to include sending the Secretariat comments on the sheets so far produced and proposing further species for which new sheets might be produced. Finally, FAO was requested to explore possible financial support for the project and the GFCM resolved as follows:

RESOLUTION XII/74/2

The Twelfth Session of the GFCM,

Recognizing that uniformity in the use of vernacular species names at national and regional levels is essential for various fisheries activities

Strongly urges all Member Nations to:

(i) examine and eventually adopt the FAO Species Names used on the "FAO Species Identification Sheets for Fishery Purposes: Mediterranean and Black Sea" as the Regional Standard Names for the GFCM area and to promote their use in all official regional documents

(ii) give highest priority to the checking and, if necessary, the correction of the National Species Names used on the above-mentioned Identification Sheets, following the provided criteria*; furthermore to officially adopt the final National Species Names and to promote their use in all pertinent official documents

(iii) issue a national official document giving for each species of interest the correspondence between the scientific name, the officially adopted national name, and the local names still in use within the country

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* (a) each name should apply to a single species
(b) each species should have only one official national name
(c) the name should be selected, wherever possible, from among the "local names" most widely used within the country, and preference might be given to the name closest, or identical, to the FAO name
(d) if a local name applies to more than one species (often to a genus or a family), a second word, characterizing the species, might be added (e.g., "hunched" snapper, "olive-striped" snapper, etc.)
(e) if a local name for a species is not available, consideration should be given to the use of the FAO species name as the national one
(f) in the case of countries using a non-Latin script, an official Latin transliteration of the national species name should be provided.

29 The question of the compilation of received regional fishery statistics by FAO was then discussed. It was noted that it was now possible to produce regularly a publication such as GFCM/XII/74/8 Addendum 1[1/] (Supplement excluded); such a document was limited to catch by species for the area taken as a whole. It was, however, reported that the Secretariat was giving serious consideration to producing tables showing catch by species by sub-area of which the Supplement[2/] referred to above was an example requiring comment (see Annex E, paragraph 9, page 49) and that countries should continue reporting with the requested breakdown.

1/ Mediterranean and Black Sea (Fishing Area 37). Nominal catches by species and by countries, 1965-72. Prepared by Fishery Statistics Unit, Department of Fisheries, FAO

2/ An experimental supplementary statistical table.

30 As to future work in the field of the development of regional fishery statistics, it was noted that attention should be given to:

(i) consolidating the work so far undertaken for the reporting of catch broken down by species and sub-area and for the reporting of vessel statistics

(ii) expanding the regional fishery statistical bulletin to include tables showing catch by species and sub-area

(iii) introducing a standardized system for the reporting of fishing effort statistics on the lines of those employed by the fishery bodies concerned with the Atlantic.

31 Lastly, the GFCM, discussing whether it was advisable to continue with a separate Working Party on Fishery Statistics noted that the statistical problems to be tackled in the near future were of direct concern to workers in stock assessment, and that there was an overlap between the membership of the Working Party on Fishery Statistics and the Working Party on Resources Appraisal and Exploitation. It was subsequently agreed that the first working party should cease acting as a separate entity, for the time being at least, and fishery statistics be dealt with within the second working party which should be duly enlarged, to permit the participation of statisticians, and renamed "Working Party on Resources Appraisal and Fishery Statistics".

(c) Resources management

32 The state of exploitation of the resources of the Mediterranean and the Black Sea, as far as can be seen from an analysis of the available data, is summarized in two reports of the Working Party on Resources Appraisal and Exploitation. Document GFCM/XI/72/6 considers the stocks of the western basin and GFCM/XII/74/5 those of the eastern basin and the Black Sea. In spite of the known deficiencies in the quality and quantity of the available data, the analyses lead to the concordant conclusion that many demersal stocks along the European coast are obviously overexploited. This situation is reflected in the increasing economic difficulty with which several fisheries are faced. It is also admitted that, in general, the pelagic stocks have not yet reached the same state and that, subject to the overcoming of difficulties in disposing of the catch, they can provide an alternative for the excess fishing capacity.

33 Already at its Eleventh Session, the GFCM had dealt with the state of the demersal stocks of the western basin of the Mediterranean. At that time it had recommended that a meeting of senior fishery officers of the countries of the western Mediterranean area be organized in order to define, on a regional basis, appropriate procedures and measures to ensure the protection of the resources and to improve the profitability of their exploitation.

34 In accordance with this request, a Meeting on Fisheries Management in the Western Mediterranean took place in Rome in April 1973. This meeting concluded that:

- there is a need to apply management measures

- national regulations are not always applied and are not yet harmonized on a regional basis, this situation showing that before planning any new measures, one should ensure the actual possibilities of their enforcement

- it is urgent to prohibit, as recommended at the Eleventh Session of the GFCM (Resolution XI/72/2, para. ii, Report of the Session p. 57), the use of trawl nets with a stretched mesh size of less than 40 mm and to introduce wherever proven necessary measures such as fishing effort limitation so that the rate of exploitation be adjusted to the stock potentials.

The meeting also recognized the importance attached to the coordination and application of these measures to the entire resources of the western Mediterranean.

35 In the light of the recommendation made by this meeting, the Secretariat undertook a synoptic analysis of the different regulatory measures appearing in national legislations (document GFCM/EC/74/6).

36 The GFCM endorsed the conclusions reached by the Meeting on Fisheries Management in the Western Mediterranean. In particular, it approved the recommendation to establish, in the framework of the GFCM, a Committee on Resources Management to produce, for the Council's consideration, such draft recommendations which it judges necessary or desirable. Further, given the similar character of resources and the inter-relationship existing between the fisheries of the different sectors of the Mediterranean, it was of the view that management needs were the same throughout the region.

37 The Secretariat informed the GFCM of the administrative and financial requirements to be met in the establishment of the Committee on Resources Management. It was announced that the funds necessary for the functioning of the Committee would be made available under the pertinent section of the approved budget of FAO.

38 The following resolution was adopted:

RESOLUTION XII/74/3

The Twelfth Session of the GFCM,

Taking into account the recommendation formulated by the Meeting on Fisheries Management in the Western Mediterranean (Rome, 18-19 April 1973),

Considering that the problems discussed by the above meeting prevail in all the Mediterranean and contiguous waters,

Noting the declaration made by the Secretariat regarding the administrative and financial implications of the present Resolution,

Decides to set up, in accordance with Article III of the 1949 Agreement establishing the GFCM and with Article X of its Rules of Procedure, a committee to be known as the Committee on Resources Management, the statutes of which shall be as follows:

COMMITTEE ON RESOURCES MANAGEMENT

Membership

The Committee will be open to all Member Nations of the GFCM

Terms of reference

The functions of the Committee shall be to:

(a) Study the various management measures required as well as their foreseeable effects

(b) Recommend the most appropriate measures for the implementation of these management measures by Member Nations, taking into account, where required, the need to harmonize measures taken by individual Member Nations

(c) Recommend the most effective methods of controlling the application of management measures at the national and regional level

(d) Carry out any other task related to resources management that may be referred to it by the GFCM

Reports

The Committee shall report to the GFCM.

39 The GFCM was informed that the Meeting on Fisheries Management in the western Mediterranean had recommended that the Secretariat prepare, for the present session, a study indicating what administrative or legal steps should be considered in order to ensure a more effective application of the recommendations of the GFCM. That study, entitled "Effectiveness of existing fisheries management machinery", was submitted as document GFCM/XII/74/10. The GFCM was also informed that at its session held in Rome from 19 to 23 February 1974, the Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean, had adopted the following text:

> "The Consultation, concerned with the consequences of overfishing of the living resources of the Mediterranean, has expressed the wish that Governments should, with the assistance of the competent institutions, take all necessary initiatives to study the possibility of drawing up, within the framework of a convention, rules for the adequate management of these resources."

The GFCM agreed that it was essential to strengthen international collaboration among Member Nations so as to carry out the exploitation of the living resources in the Mediterranean in an orderly and fair manner. It was also mentioned that stricter forms of international cooperation and control were required, not only to obtain an optimum sustained yield from these resources but, in some cases, to rebuild certain stocks that have been seriously depleted.

40 In view of the urgency of the situation, the GFCM felt that initially, and at least on a temporary basis, full use should be made of the procedural means available to it under the 1949 Agreement, under which it was established, and Rules XV-1, XIV-4 and XIV-6 of its Rules of Procedure. Thus, the GFCM will formulate conservation measures as recommendations that will be drafted in such a form that they can be directly applied by Member Nations in accordance with the following procedures: the Director-General of FAO will transmit recommendations to Member Nations with the request that they report to him, after the lapse of an agreed period of time, what measures they will have taken or intend to take to implement them; the Director-General will then be requested to report to the GFCM the replies of Member Nations. In this regard, the GFCM noted with great satisfaction that Italy had withdrawn the reservation it had expressed concerning this procedure at the Meeting on Fisheries Management in the western Mediterranean.

41 At the same time, however, the GFCM agreed that it was necessary to undertake without delay a revision of the provisions of the 1949 Agreement under which it was established and, in the light of the experience acquired by regulatory fishery bodies set up outside the framework of FAO, to recommend such amendments to the Agreement as would make the GFCM more effective as regards the adoption, implementation and enforcement, including on the high

seas, of conservation measures. Realizing that it will be a complex and lengthy task, the GFCM decided to entrust it to its Committee on Resources Management. It urged Member Nations to ensure that their delegations to the relevant sessions of the Committee would be so composed as to allow a thorough examination of all the technical, administrative, legal and other aspects involved.

42 The GFCM adopted the following resolution:

RESOLUTION XII/74/4

The Twelfth Session of the GFCM,

Taking into account the recommendations formulated by the Meeting on Fisheries Management in the western Mediterranean (Rome, 18–19 April 1973) and the study on "Effectiveness of existing fisheries management machinery" submitted by the Secretariat in document GFCM/XII/74/10,

Noting the wish expressed by the Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean (Rome, 19–23 February 1974) regarding the desirability of drawing up, within the framework of a convention, rules for the adequate management of these resources,

Agrees that initially, and at least on a temporary basis, it will formulate conservation measures as recommendations that will be drafted in such a form that they can be directly applied by Member Nations in accordance with the following procedure: the Director-General of FAO will transmit recommendations to Member Nations with the request that they report to him, after the lapse of an agreed period of time, what measures they will have taken or intend to take to implement these recommendations; the Director-General will then be requested to report to the GFCM the replies of Member Nations,

Considers that it is necessary to undertake without delay a revision of the 1949 Agreement establishing the GFCM and, in the light of the experience acquired by other regulatory fishery bodies, to recommend such amendments to the Agreement as would make the GFCM more adapted to the new tasks it may be called upon to perform and more effective as regards, in particular, the adoption, implementation and enforcement, including on the high seas, of conservation measures,

Instructs its Committee on Resources Management to study this question and to report to the GFCM at its Thirteenth Session,

Urges Member Nations to ensure that their delegations to the relevant sessions of the Committee will be so composed as to allow a thorough examination of all the technical, administrative, legal and other aspects involved.

(d) Economic problems of the rational exploitation of Mediterranean fishery resources

43 The Chairman of the Symposium on Economic Problems of the Rational Exploitation of Mediterranean Fishery Resources, Mr. A. Demetropoulos, in introducing the item, reviewed the major problem of fisheries development in the Mediterranean over the next 10 to 15 years. These are all essentially associated with the main problem that demand for fish in the area will continue to increase but the possibilities of increasing supply from natural stocks will become progressively more problematical. Reference was made to the fact that many countries, particularly in the southern and eastern Mediterranean, have ambitious plans for the development of their fishing industries which will in total add up to a considerable increase in fishing effort but, if rational utilization of the resources of the Mediterranean and Black Sea is to be achieved, progress in other fields will be necessary; the Symposium identified three main areas where action would be required: training, management and marketing; in these fields, as well as in others, greater cooperation and coordination between Member Nations was urged. The discussion also generated suggestions for follow-up work in the field of economics and marketing and, in addition to the three areas mentioned above, the GFCM endorsed a proposal that the Secretariat should undertake studies of the prospects for production, consumption and trade of fishery commodities of special interest to Mediterranean and Black Sea countries.

44 The GFCM considered a resolution, approved by the Symposium, recommending the establishment of a regional scheme for training persons in the middle and upper levels of the fishery services, in particular managers, economists, scientists and technologists. The principle of this resolution received widespread support. Some delegations indicated that the need to train such personnel had been felt in their countries and a wide variety of subjects in which training was given, including aquaculture techniques, processing, statistics, etc. were identified. Some participants, however, mentioned that, initially, high-level personnel had been trained but experience had shown that it might have been better to begin with middle grade staff.

45 A question was raised regarding the mechanism by which such a scheme for mutual aid would be established and it was pointed out that, first of all, a review would have to be made of what was actually being carried on in the region and that national centres capable of development into regional institutes would need to be evaluated. Furthermore, it was stated that the training programmes should be flexible and, where appropriate, intensive ad hoc courses of short duration on a national or regional basis, supplemented by a pool of fellowships, should be used for specialist training. On the basis of the proposal made by the Symposium, the following resolution was adopted:

RESOLUTION XII/74/5

The Twelfth Session of the GFCM,

Considering that the improvement of national capabilities in high and middle-level personnel is an essential element in the rational development of Mediterranean and Black Sea fisheries,

Further considering that the required training embraces all fishery specialized activities and cover also management and administration,

Noting that many individual countries in the area are not equipped to treat simultaneously all aspects of fisheries training, and that training on a regional or sub-regional basis would be more rational and effective, thus avoiding duplication of facilities,

Recommends that the GFCM

- evaluate and study the possibility of creating a network of regional or sub-regional training centres, making the best use of the already existing facilities, supplemented by ad hoc courses on a national or regional basis, and of establishing a pool of fellowships for the training of high and middle-level fisheries personnel in various fields,

- encourage Member Nations to participate in, and contribute actively to, such regional training schemes and to promote refresher courses for their staff, particularly in the fields of economics, statistics and data processing,

- explore sources of finance and other forms of support through bilateral and multilateral donor institutions, including United Nations Development Programme and United Nations Environment Programme for the subsequent development of such intensive large-scale regional training projects.

46 The GFCM then turned to consideration of another resolution of the Symposium which recommended that it take further initiative toward introducing a rational management regime of Mediterranean fisheries. It approved this request. Following further discussion at a later stage of the Session, the following resolution was approved.

RESOLUTION XII/74/6

The Twelfth Session of the GFCM,

Recognizing

- the need to limit fishing effort in certain over-exploited areas,

- the advisability of improving and enforcing the application of existing management measures,

- the need to introduce minimum mesh regulations throughout the Mediterranean basin and, if need be, based on the state of exploitation of the stocks, special regulations for certain sub-areas,

- the need in this matter to harmonise the regulations and to define appropriate standardised methods for measurement of the mesh and the inspection of gear,

Further recognizing the advisability of adopting uniform regulations for fisheries in international waters,

Aware that practical difficulties entailed by the implementation of such measures could be more easily overcome by making full use of experience gained in this field in other areas of the world,

Requests the Secretariat to prepare an annotated draft which would serve as a basis for the elaboration of legislations on mesh size in the Mediterranean, including definition of the methods for measuring mesh size, rigging devices to be used as well as enforcement procedures,

Requests the Committee on Resources Management to examine the draft prepared by the Secretariat and adopt it in the form of a recommendation which could be directly applied by Member Nations,

Invites the Director-General of FAO to transmit this recommendation to Member Nations with the request that they report to him, after the lapse of such period of time as he may determine, the measures they will have taken or plan to take to implement the recommendation,

Further requests the Director-General to report to the GFCM the replies received.

III AQUACULTURE AND FISHERIES IN BRACKISH WATERS

47 The report of the Fifth Session of the GFCM Working Party on Aquaculture and Fisheries in Brackish Waters, and the meeting of COPRAQ research workers which took place at Lesina, Italy, from 8 to 10 May 1973 was presented by Mr. F. Lumare.

48 The report (GFCM/XII/74/11) was adopted.

49 Several delegations gave information on the progress made in aquacultural research in their countries since the Lesina meeting. In this connexion Tunisia, with the assistance of an FAO/UNDP project, is continuing its research on the culture of mullets in the Lake of Tunis and in certain natural ponds; this work includes research on the feeding of fry; the culture of carp has also been undertaken. In France ongoing work includes oyster culture, acclimatization and rearing of trout in the marine environment, and the breeding of shrimp. Experiments on collection of spat of the flat oyster (Ostrea edulis) in deep water have been satisfactorily completed and have led to the decision to use this technique on a commercial scale from 1974; the acclimatization and experimental culture of trout in some coastal lagoons have now been put on an industrial basis; experimental work on the culture of shrimps have somewhat slackened; an association has, however, obtained a noticeable production of Penaeus kerathurus in 1973, using larvae coming from hatcheries of the Atlantic coast; it seems that the problems of crustacean culture are essentially at this stage those of the profitability of the operation and the production of larvae; work on the extensive culture of eels and of fundamental research into the feeding of certain species of high commercial value is continuing. In Spain research is going on into the feeding of mullet and seabream; satisfactory results have been obtained in the culture of Palaemon serratus and Penaeus kerathurus although, because of the pollution of coastal waters near the laboratory,

it had been difficult to bring about the spawning of the latter species; experiments into the feeding of these crustaceans continue. In Yugoslavia research is being undertaken into the settling of oyster and mussel spat, into the growth of mullets in a natural environment and on the aquarium culture of seabream and of eels; the introduction of tilapia is foreseen. In Egypt good results have been obtained in the acclimatization of sole in certain brackish water lagoons; work is also underway into shrimp and carp breeding. In Israel research is concentrated into the high density stocking of ponds.

50 The GFCM decided to abolish its Working Party on Aquaculture and Fisheries in Brackish Waters. This working party has, indeed, completed the tasks assigned to it by the Tenth Session of the GFCM (1969), in particular that of promoting a Cooperative Programme of Research on Aquaculture (COPRAQ) as an intermediary for the execution of the GFCM programme in this field. About 30 institutions are presently participating in this programme established on an entirely voluntary basis and for which FAO provides the Secretariat. It appears, however, that in order to reach a desirable level of efficiency, COPRAQ should have a minimum of financial support which would permit it more easily to establish and coordinate some of its projects, particularly those involving developing countries. The Secretariat has been charged with exploring the possibilities of such finance, either on a multilateral or bilateral basis. In particular, consideration should be given to funding for research in aquaculture offered by the Technical Advisory Committee of the Group on International Agriculture Research.

51 The Secretariat informed the session of the results obtained up to the present time by the enquiry into sites suitable for aquaculture in the Mediterranean region recommended by the GFCM Symposium on Aquaculture in Brackish Waters (Athens, 1972). Although the replies are still partial, they indicate that considerable areas of brackish water could be used for aquaculture. In this respect, comments were made on the possible benefits to aquaculture of warm water coming from power stations, a fact which had already been mentioned during the Symposium. It would be worthwhile to take this into account when preparing a synthesis of the enquiry on sites.

52 An ad hoc meeting was organized during the Session which was attended by the participants interested in aquaculture in brackish waters. Information was provided, in some cases supplementing that given to the plenary session, on the work in progress on aquaculture in Cyprus, Egypt, France, Italy, Spain, Tunisia and Turkey. It confirmed that several actions recommended by the GFCM Symposium on Aquaculture in Brackish Waters were already being implemented. These concerned essentially aquaculture planning, fish and shellfish diseases and artificial feeds. As regards the last subject, it was pointed out that artificial feeds might change the organoleptic characteristics of cultivated species; therefore feeds should be produced which left the fish with a taste as natural as possible.

53 The meeting took note of the resolution of the Fifth Session of the Working Party on Aquaculture and Fisheries in Brackish Waters concerning the organization of a Workshop on the controlled breeding and larval rearing of finfish of special interest to the Mediterranean (Dicentrarchus labrax, Sparus auratus and Mugil spp.) as well as penaeid shrimps. The value of such a meeting was stressed and the Secretariat was requested to pursue its efforts to find the required funds.

54 The meeting pointed out how the COPRAQ could allow for the coordinated promotion of research in the field of aquaculture in the Mediterranean. It expressed the view that meetings of participants in this cooperative programme should be continued regularly at Member Nations' own expenses, as far as possible on an annual basis. The Secretariat was requested to study the preparation of the next meeting.

55 The participants in the ad hoc meeting took note of a report entitled "A multi-disciplinary project for improvement of the living resources of the Mediterranean Sea", prepared by the Director of the International Ocean Institute of Malta and presented to the Session for comment. This project would consist in the establishment of an international laboratory for the improvement of the biological resources of the Mediterranean, of which one of the tasks would be the promotion of the culture of young fish beyond the age of exceptionally high mortality and their release into the open sea or into more or less closed areas. Several participants expressed reservations about the application in the Mediterranean in the near future of such techniques which had shown their limitations and difficulties in other parts of the world. They considered, however, that basic ecological research within the framework of a multiple use of the oceans could have a long-term interest and that it would be useful to keep abreast of the development of this project to the extent that it could contribute to COPRAQ.

56 The plenary session approved the conclusions of the ad hoc meeting on brackishwater aquaculture.

IV. MARINE POLUTION AND ITS EFFECTS ON LIVING RESOURCES AND FISHERIES

(a) Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean

57 The GFCM was informed of the action taken by the Secretariat to follow up Resolution XI/72/1 in which it had requested the Director-General of FAO to consult with Member Governments of GFCM with a view to convening a meeting of these Governments for discussion aimed at preparing a Convention to control the discharge into the Mediterranean Sea of pollutants that would affect its living resources. It noted with satisfaction that nearly all Governments that had replied to the Director-General's enquiry had expressed themselves in favour of the proposed meeting and that a Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean had been convened at FAO Headquarters in Rome from 19 to 23 February 1974. It further noted that the Consultation had started consideration of a series of guidelines that would be taken into account in the future drafting of one or more conventions dealing with pollution in the Mediterranean area. The GFCM was pleased to learn that the Consultation was scheduled to resume its work in Rome from 27 May to 1 June 1974. In this connexion, it requested the Director-General of FAO to call upon the Mediterranean Governments that had not been represented at the first session of the Consultation to attend the new session.

58 The GFCM reiterated its view that the semi-enclosed nature of the Mediterranean posed particular problems and that it was urgent to adopt international measures to protect living resources and fisheries from all sources of pollution. More specifically, it considered that it was essential to take special measures to prevent and abate pollution by ships. In this respect it stressed that it was necessary to strengthen certain aspects of the 1973 International Convention for the Prevention of Pollution from Ships.

59 The GFCM endorsed the wish expressed by the Consultation that all the competent specialized agencies of the United Nations as well as other competent international bodies - in particular UNEP[1] - should support the efforts of FAO for the protection of the marine environment in the Mediterranean.

60 The GFCM emphasized that, while the Consultation was proceeding with its work, and pending agreement on the proposed protection measures, certain immediate actions should be initiated to facilitate regional cooperation and mutual aid in dealing with acute, as well as build-up, pollution emergencies posing serious threats to the interests of the marine

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1/ United Nations Environment Programme

environment and in particular the utilization or management of living resources and fisheries in the Mediterranean area

61 Following its deliberations under this item of the agenda, the GFCM adopted the following resolution:

RESOLUTION XII/74/7

The Twelfth Session of the GFCM,

Noting with appreciation the measures taken by the Director-General of FAO to follow up Resolution XI/72/1,

Welcoming the results already achieved by the Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean at the session it held in Rome from 19 to 23 February 1974,

Calls upon all Member Nations that had not been represented at the first session of the Consultation, to be represented at the new session scheduled to be held in Rome from 27 May to 1 June 1974,

Urges the Consultation to complete at the earliest possible date the formulation of guidelines that could form the basis of a convention, or conventions, for the protection of living resources and fisheries from pollution in the Mediterranean,

Expresses the wish that all the competent specialized agencies of the United Nations as well as other competent international bodies, in particular the United Nations Environment Programme, should support the efforts of FAO for the protection of the marine environment in the Mediterranean as regards living resources and fisheries,

Recommends to Mediterranean coastal states, not only to become parties to the 1973 International Convention for the Prevention of Pollution from Ships, but also to accept as binding the optional annexes III, IV and V of the Convention,

Urges these countries to unite their efforts to have the Mediterranean Sea declared as a Special Area under the said Convention, for the purposes of noxious liquid substances in bulk.

(b) Other activities of the GFCM in the field of marine pollution

62 The GFCM reviewed the report of the First Session of its Working Party on Marine Pollution in Relation to the Protection of Living Resources, held in Rome, 14-18 January 1974 and adopted it. It noted that the working party had prepared a preliminary evaluation of information available on sampling and analytical activities in the area, as a basis for planning cooperation among interested institutions. It noted also that the working party had started a review on ongoing national and regional monitoring programmes in the Mediterranean and had outlined the general work plan and requirements for future research, including those aspects relevant to the progressive development of a comprehensive

Mediterranean monitoring programme expected to provide data needed, among other uses, for the protection of fisheries and aquaculture. In this connexion the working party recommended the use of the FAO Fishery Data Centre as the regional centre for storage, compilation and exchange of data on levels of contaminants in biota in the Mediterranean. Some preliminary information on inputs of pollutants into the Mediterranean through rivers was compiled and will be expanded in the future.

63 Some delegates restated their concern about growing pollution problems, especially in coastal waters which may affect fisheries resources and products. Therefore, they noted with satisfaction that, at the invitation of FAO, the Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean took place in Rome, 19-23 February 1974. The follow-up of this consultation will call for increased coordinated research programmes and data collection to provide the basic scientific advice required for the development of adequate protection and management measures.

64 The GFCM, being aware of the constitutional responsibility of FAO to protect the living aquatic resources and fisheries, among other factors, from environmental degradation and pollution, recognizedthat it should contribute to the promotion and coordination of research programmes in the region. These programmes should aim at evaluating effects on biota and at work providing the scientific basis to achieve these objectives as directly related to the monitoring of contaminants in aquatic organisms and communities.

65 The GFCM stressed the need for a comprehensive Mediterranean monitoring programme covering,in the beginning,only a small number of pollutants of major global significance in biota, water and sediments. It proposed that such a programme should be planned along the lines of the North Sea study carried out under the aegis of the International Council for the Exploration of the Sea; it should be based on the experience, systems and national facilities in the region, strengthened as required. Through collaboration,adequate regional coverage will be achieved and thus contribute also to the worldwide monitoring programme envisaged in the framework of the Global Environment Monitoring System (GEMS).

66 In view of the increasing number of bodies dealing with marine pollution, the GFCM noted with appreciation the coordination of its activities in this field with those of IOC and ICSEM in the context of CIM[1/] and encouraged continuation of this collaboration. particularly in view of the organization of an international workshop on marine pollution in the Mediterranean which will take place in Monaco in September 1974.

67 An ad hoc meeting of experts on marine pollution was held during the session. It reviewed briefly ongoing programmes and activities in Member Nations and identified institutions active in the field of pollution with which cooperation should be sought in future activities of the GFCM.

68 Based on the suggestions of this ad hoc meeting, the GFCM decided that its Working Party on Marine Pollution in Relation to the Protection of Living Resources should continue its activities, giving priority to:

(i) the planning and promotion of initial steps for the implementation of a cooperative research programme on effects of pollutants on aquatic organisms and communities

(ii) the outlining and initiating of a pilot project on monitoring a few contaminants in marine organisms, with priority on mercury.

1/ Cooperative Investigations in the Mediterranean

69 The GFCM was of the opinion that the membership of the working party should be revised according to the new tasks given to it and, if preparations by correspondence were sufficiently advanced, the working party should have its next session in the summer of 1974 to be able to prepare an adequate input to the Mediterranean Regional Pollution Workshop.

70 Based on the report of its Working Party and on the discussions held during the session the GFCM adopted the following resolutions:

RESOLUTION XII/74/8

The Twelfth Session of the GFCM,

Taking into account the importance of fisheries and aquaculture in the Mediterranean region,

Noting with concern the increasing impact of pollution on the living marine resources in the area,

Appreciating the close cooperation between GFCM, IOC and ICSEM in the development of the Cooperative Investigations in the Mediterranean and in the organization of a Mediterranean Regional Marine Pollution Workshop aimed at developing plans for a comprehensive Mediterranean monitoring programme,

Being aware however, of the fact that there is a general lack of coordinated programmes, especially of those dealing with contaminants in marine organisms and with the effects of pollutants on living resources, and that there is a need to facilitate cooperation between Member Nations and the implementation of a comprehensive Mediterranean monitoring programme,

Recommends

- that a cooperative programme on effects of pollutants on marine organisms and communities be initiated
- that a pilot project be organized for regional monitoring of a few selected contaminants in organisms, with priority on the monitoring of mercury in commercial species, as a contribution to a comprehensive Mediterranean monitoring programme
- that the study of inputs of pollutants into the Mediterranean be continued in close collaboration with the European Inland Fisheries Advisory Committee and the Committee for Inland Fisheries of Africa
- that the Working Party on Marine Pollution in Relation to the Protection of Living Resources continue its activities with special emphasis on the above tasks
- that Member Nations and institutions concerned exchange rapidly data on contaminants in aquatic organisms, using the FAO Fishery Data Centre as a regional centre for the Mediterranean,

Requests the Secretariat to explore with the United Nations Environment Programme means of support for these regional activities of the GFCM and for national programmes of developing countries in the area to enable them to fully participate in these cooperative activities.

V. SYMPOSIUM IN CONJUNCTION WITH THE THIRTEENTH SESSION

71 The GFCM reviewed the paper GFCM/XII/74/14 in which it was suggested that the theme "Fisheries data: practical and scientific applications" might be an appropriate subject for the Symposium in conjunction with the Thirteenth Session; however, it was felt that this matter could be more effectively dealt with during the sessions of the GFCM itself and its relevant working parties.

72 The GFCM then considered alternative topics. The Tunisian delegation suggested that, in view of the interest in training shown by the present session, this might be a suitable subject. The Secretariat drew attention to the institutional problems of development and rational resource utilization which had been touched on briefly during the recent Symposium but which, in view of its importance, merited more detailed discussion and might also be considered as a possible Symposium subject. Within this general heading could be included such matters as the organization of scientific research, the problem of communicating the results of research to the fishing industry and administration, the question of communication between the various elements of the fisheries sector, viz fishermen, research workers and administrators. The discussion might also consider in more detail the administration of government support to the industry and its efficiency.

73 There was also a suggestion that stock assessment methods including acoustic techniques, in which there had been progress in recent years, should be discussed by the GFCM although this need not necessarily be the subject of the Thirteenth Session Symposium. It would, however, be unfortunate if this matter could not be discussed by the GFCM before 1978, and it was suggested that some other means for airing this subject might be found, such as inclusion on the agenda of the Thirteenth Session proper.

74 In concluding the discussion, it seemed to the Chairman that, so far as the Symposium was concerned, the two subjects previously mentioned - training and institutions - were supplementary and could probably be combined into a suitable unified theme. It was agreed, therefore, that the subject of the Symposium would be the institutional aspects of fisheries development which would, where appropriate, include discussion of the problems and possibilities of national and regional training at all levels.

75 Consideration was also given to the organization of the next session of the GFCM. It was agreed that the session, after a short plenary, would continue with a series of working party meetings or discussion groups which would later report to plenary sessions and it was suggested that one such discussion group might consider the question of acoustic surveys and other methods of stock assessment to which reference was made in paragraphs 12 and 73.

VI. PARTICIPATION OF EXPERTS IN MEETINGS OF GFCM SUBSIDIARY BODIES

76 The development of GFCM responsibilities and activities in various fields will imply an increased participation of qualified experts from Member Nations, and thus a parallel increase in travel expenses that the budget granted by FAO to the GFCM will not be able to completely cover. It was therefore agreed that Member Nations should try to meet the travel and subsistence costs of experts selected in their personal capacity; the GFCM for its part would try, insofar as funds are available, to finance the travels which could not be borne by Member Nations.

VII. ELECTION OF THE CHAIRMAN AND VICE-CHAIRMEN

77 The GFCM unanimously elected: Chairman: Mr. C. Maurin

Vice-Chairmen: Mr. D. Nedev
Mr. A. Demetropoulos

VIII. DATE AND PLACE OF THE THIRTEENTH SESSION

78 The Turkish delegation proposed Istanbul as the place for the Thirteenth Session of the GFCM in 1976. The GFCM expressed its appreciation and offered its sincere thanks for this invitation

IX. ADOPTION OF THE REPORT

79 The report of the Twelfth Session of the GFCM was adopted on 15 March 1974.

ANNEX A

AGENDA

1. Opening of the Session
2. Adoption of the Agenda and arrangements for the Session
3. Report of the Executive Committee
4. Rational exploitation of fishery resources in the Mediterranean
    - (a) Resources appraisal and exploitation
    - (b) Economic problems of the rational exploitation of Mediterranean fishery resources
    - (c) Fishery statistics
    - (d) Resources management
5. Aquaculture and fisheries in brackish waters
6. Marine pollution and its effects on living resources and fisheries
    - (a) Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean
    - (b) Other activities of the GFCM in the field of marine pollution
7. Symposium in conjunction with the Thirteenth Session
8. Any other matters
9. Election of Officers
10. Date and place of the Thirteenth Session
11. Adoption of the Report

ANNEXE B
ANNEX B

LISTE DES DELEGUES ET OBSERVATEURS

LIST OF DELEGATES AND OBSERVERS

I ETATS MEMBRES DU CGPM/GFCM MEMBER NATIONS

Algérie/Algeria

Bulgarie/Bulgaria

NEDEV, D.* (Représentant/Representative)
Directeur général
UEE "Ribno Stopanstvo"
Bourgas

IVANOV, L.*
Directeur
Institut de recherche sur les
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Varna

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ALEXANDROVA, Mme K.*
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MARINOV, T.*
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Varna

VARBANOV, V.
Chef des relations internationales
UEE "Ribno Stopanstvo"
Bourgas

VELTCHEV, V.*
Centre scientifique de la pêche
Industrialna, 3
Bourgas

KRIVSKI, V.N.*
UEE "Pêches de la Mer Noire"
Avram Gatchev, 24
Varna

KOSTOV, K.M.*
UEE "Transport maritime"
Panagurichte, 17
Varna

KALTCHEV, P.K.*
Directeur
Département contre la pollution
Tzaribrod, 3
Varna

Chypre/Cyprus

DEMETROPOULOS, A. (Représentant/Representative)
Chief Fisheries Officer
Department of Fisheries
Tacmatarchou pouliou, 5-7
Nicosia

Egypte/Egypt

SHAHEEN, A.H.
Institute of Oceanography and Fisheries
Kayed Bey
Alexandria

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* A participé à la session et au symposium/Attended both the Session and the Symposium
** N'a participé qu'au symposium/Attended the Symposium only

Espagne/Spain

MASIP COSIN, J. (Représentant/Representative)
Secretario
Comisión Permanente de Pesca
del Mediterráneo
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MASSUTI OLIVER, M.*
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ANNEX C

LIST OF DOCUMENTS PREPARED FOR THE SESSION AND THE SYMPOSIUM

A. SESSION

GFCM/XII/74/1		Provisional Agenda
	2	Annotated Provisional Agenda
	3	Provisional Timetable
	4	Report of the Executive Committee
	5	Report of the Fifth Session of the GFCM Working Party on Resources Appraisal and Exploitation
	6	Report of the Meeting on Fisheries Management in the western Mediterranean
	7	Report of the Symposium on Economic Problems of the Rational Exploitation of Fishery Resources in the Mediterranean
	8	Report on the GFCM Programme for Fishery Statistics
	9	Species Identification Sheets for Fishery Purposes (Mediterranean and Black Sea)
	10	Effectiveness of Existing Fisheries Management Machinery
	11	Report of the Fifth Session of the GFCM Working Party on Aquaculture and Fisheries in Brackish Waters and Meeting of COPRAQ Research Workers
	12	Report of the Consultation on the Protection of Living Resources and Fisheries from Pollution in the Mediterranean
	13	Report of the Second Session of the GFCM Working Party on Marine Pollution in Relation to the Protection of Living Resources
	14	Fisheries Data: Scientific and Practical Applications
GFCM/XII/74/Inf.1		List of Documents
	2	Information for Participants
	3	List of Participants (provisional)

B. SYMPOSIUM

GFCM/EC/74/1	Prospectus
2	Provisional Agenda
3	Provisional Timetable
4	Perspectives for Fisheries Development to 1985
5	Some Aspects of Fisheries Policy in the Mediterranean Region
6	The Regulation of Fishing Effort in Member Countries
7	Marketing Aspects of a More Rational Exploitation of Fishery Resources in the Mediterranean

GFCM/EC/74/Inf.1	Provisional List of Documents
2	Mediterranean Fisheries; Situation and Outlook, P. Adam
3	Initiative for the Rationalisation of the Fisheries Sector in Italy with Special Reference to the Upper and Middle Adriatic, G. Bombace and G. Cingolani
4	The Influence of Biological, Technological, Social and Economic Factors on Fisheries in the Adriatic, S. Jukić and C. Piccinetti
5	The Development of High Seas Fisheries by the People's Republic of Bulgaria, D. Nedev
6	Some Comments Upon Fishing Activities in the western Mediterranean, C. Bas
7	Survey of Consumer Attitudes to Fish and Fishery Products and its Indications regarding Future Trends, M. Bar Ilan

ANNEX D

REPORT OF THE SYMPOSIUM ON ECONOMIC PROBLEMS OF THE RATIONAL EXPLOITATION OF MEDITERRANEAN FISHERY RESOURCES

INTRODUCTION

1 The GFCM Symposium on Economic Problems of the Rational Exploitation of Mediterranean Fishery Resources was held in Varna, Bulgaria, from 7 to 9 March 1974, and was attended by participants from eleven Member Nations and observers from two international organizations (see Annex B, page 29).

2 Mr. Z. Ben Mustapha, Chairman of the GFCM, opened the Symposium and introduced Mr. A. Demetropoulos, Chief Fisheries Officer, Cyprus, who was nominated as Chairman of the Symposium.

3 The Agenda (see Appendix 1, page 45) was adopted.

4 The agenda items were discussed during four sessions, each with a discussion leader. The discussion leaders were:

P. Adam	Perspectives for fisheries development to 1985 in member countries
Z. Ben Mustapha	Plans and policies for fisheries development in member countries
G. Bombace	Review of present management action in the Mediterranean and Black Seas
R.J. Bolopion	Marketing aspects of a more rational exploitation of fishery resources

I. PERSPECTIVES FOR FISHERIES DEVELOPMENT TO 1985 IN MEMBER COUNTRIES

5 In introducing the paper, the Secretariat drew attention to the changing situation in Mediterranean and Black Sea countries with respect to the growth in fisheries production. Catches by GFCM countries, including production from inland waters, had increased by over 1 million tons in the period from 1960 to 1970 but the rate of increase in production had been slowing down, averaging 5.1 percent per annum in the first half of that period, but only 2.1 percent in the second. Particularly serious has been the fall in landings from non-Mediterranean waters which had in very recent years shown an absolute decline. Paradoxically, against the overall trend, production from the Mediterranean and Black Seas had shown a more rapid rate of increase in the late sixties than earlier in the decade but catches from these waters still accounted for only about 20 percent of the total landings by Member Nations.

6 Demand in the region could be expected to grow if only under the impact of population growth and even this would require by 1985 an additional half million ton of fish if *per caput* consumption were not to fall. However, with economic development and rising income in the region, some increase in *per caput* consumption could also be expected. This might reach 14.5 kg by the middle of the next decade and this would imply an increased total supply of 1.8 million tons over present levels. Compared with these demands, the possibilities of further increases in catch by Mediterranean countries were rather limited,

although the Mediterranean and Black Seas offered scope for production increases which in certain circumstances could meet the needs of these countries now depending entirely on the Mediterranean for their supplies. The future for countries drawing large supplies from extra-Mediterranean waters was seen as mere problematic.

7 There was considerable discussion of the estimate of potential catches in the Mediterranean and Black Seas which indicated the possibility of an increase in sustained yield of up to 1 million tons, mostly of pelagic species. The presently small share of Bulgaria-Romania in the pelagic fisheries of the Black Sea was commented on and it was explained that the main pelagic stocks do not overwinter off the coast of Romania and Bulgaria and are available to Romanian and Bulgarian fishermen for only short periods. It was also pointed out that the seasonal nature of fisheries and the associated marketing and processing problem also inhibited the exploitation of these stocks. It was, however, generally agreed that the problem of expanding the pelagic fisheries was one of encouraging greater consumer acceptability, a subject which was due for discussion at a later session of the Symposium. There was, however, one dissenting delegation which claimed that consumer preference was a luxury enjoyed only by high-income countries and the main constraint to further development of the fisheries for pelagic species was in fact catching capacity.

8 Other methods of dealing with the growing problem of supply were discussed. Although it was unlikely to make a big impact on the overall problem, mention was made of the good possibilities for increasing production by aquaculture. In particular the attention of the Symposium was drawn to the large areas in the south and east of the Mediterranean suitable for the transplanting of mullet; one of the main problems to be overcome in this respect was to reduce the mortality of the fry in transport. Similarly good prospects existed for the cultivation of eels, other fin fish and shell fish. Apart from marine aquaculture, carp culture in fresh waters offered good possibilities, especially in the warmer waters of the region where this species could reach marketable size within six months.

9 The question was raised of why, in the consideration of a paper on the economic aspects of fisheries development, the discussion always centred on quantities and not values. It was pointed out, however, that development was based on a physical resource. Although pelagic species were generally of low unit value, they were susceptible to exploitation by highly productive types of gear and could be caught in large quantities. The return per fisherman was therefore not very different from that obtained from exploiting demersal fish which are caught in small quantities but are generally of higher unit value. It was also pointed out that it might be dangerous to talk in terms of value since this would obscure the nutritive aspects of fisheries development. In passing, however, attention was drawn to the high value of the Mediterranean catch which in total exceeded that of much more productive areas such as the Northwest Atlantic and Southeast Pacific, and which allowed the industry to support a comparatively large number of people.

II. PLANS AND POLICIES FOR FISHERIES DEVELOPMENT IN MEMBER COUNTRIES

10 In introducing this item, the Secretariat indicated that an examination of government legislation on the fishing industry generally revealed three main policy objectives. These were: to produce food, to help achieve a positive balance of payments, and to fulfil a socio-economic role, especially in the provision of employment. It was noted that there were sometime conflicts of policy such as attempting to achieve maximum employment and maximum food supply-objectives which were not always compatible. Possibly the most serious conflict of policy existed, however, in those cases where governments supported the industry by grants, loans, etc., and generally encouraged fishing effort in situations where some of the stocks already appeared to be overexploited. Such a policy would be in such cases not only wasteful but likely to be self-defeating.

11 It was suggested that what was required in the Mediterranean was a policy of rationalization, balancing fishing effort with resource availability. For those countries exploiting overfished stocks, this would mean generally a cutback in the labour and capital employed

but with better returns being earned by the fishermen remaining in the industry. A policy of rationalization also implied the possibility of increases in fishing effort where there were underexploited stocks.

12 A number of delegations supplemented information given in paper GFCM/EC/74/5 concerning assistance given in their countries to aid the growth and development of their fisheries. The delegation of Israel indicated that in his country grants of up to 40 percent and loans of up to 50 percent of the capital cost of new vessels or the modernization of old ones were available; in spite of this there has been no increase in the number of boats in recent years. Development effort was, however, concentrated mainly on fish culture using high density methods; the Government of Israel believed there was an impending world shortage of protein and this was, in their opinion, the most efficient way of meeting it. Other countries of the southern and eastern Mediterranean indicated that they had ambitious plans for the development of their fisheries although in the case of Turkey, where a doubling of production during the course of the present five-year plan was envisaged, these developments would be based mostly on the Black Sea. The delegation of France indicated that the information given in paper GFCM/EC/74/5 in respect of his country needed amendment since assistance was no longer given to the marketing of sardine. Furthermore full advantage had not been taken of a national scheme of assistance for the design and construction of vessels.

13 Other countries such as Egypt and Tunisia reported on the fishery development policies and the support provided for promoting fisheries expansion. This support included: subsidies and loans with low interest rates for acquiring boats and fishing gears; improvement in marketing and distribution of fishery products; supply of fry and technical assistance to fish pond operators. The Lebanese delegation also indicated the effort made in his country for rationalizing the exploitation of fishery resources.

14 A number of delegates spoke of plans for the development or expansion of fisheries in waters outside the Mediterranean although the difficulties facing such developments were admitted, and the need to assess the situation carefully before investing in such ventures was stressed. In this connexion, the delegation of Bulgaria drew attention to the important role played by international fishery commissions in the Atlantic in permitting the rational and orderly utilization of resources. It also stated that unfortunately, there were not such commissions in all areas and there may be as a consequence some underutilization of resources, particularly in those cases where the terms of coastal states for joint participation within extended fishery areas under national jurisdiction were prohibitive. Mention was also made of the recent rises in the cost of fuel which was shifting the balance of advantage against distant-water fisheries and in favour of the coastal states; for these reasons Bulgaria was revising plans for the further development of her long-distance fisheries and giving greater emphasis to operations in local waters. The delegation of Bulgaria further suggested that the cooperative and coordinating role of the GFCM should be strengthened and developed. In this regard the exchange of information between Member Nations and between the GFCM and other commissions should be improved, and in particular with the Mixed Commission for Black Sea Fisheries.

15 A number of delegations supported the view that all countries exploiting the Mediterranean and Black Seas should attempt to achieve a balance between fishing effort and resources available. In this connexion the delegation of Italy spoke of financial legislation in his country which required the scrapping of old vessels before new credits could be obtained to construct new vessels. Reference was also made to a Spanish scheme which authorized the construction of new vessels only on evidence of the scrapping of an equivalent horsepower of old vessels. In Cyprus also attempts were being made to discourage further expansion of the trawl fishery around the island for which it was believed there was no further potential, and effort was being directed to underexploited stocks in inshore waters fished by other methods and to aquaculture.

16 Several delegates spoke of the important part which training played in their development plans. This included not only training fishermen but also technicians and administrators. In this respect, while one delegation spoke of increased cooperation between

scientists and industry, one of the more serious problems in the Mediterranean was a lack of fisheries administrators with a broad knowledge of the industry and in particular its scientific aspects. In this respect the Tunisian delegation proposed the establishment of a regional institute for training high-level fishery personnel and in particular of managers and economists on the one hand and of well-qualified fishery technologists on the other. In view of the importance accorded to training in the region, the Symposium proposed, for the endorsement of the GFCM, the following resolution:

RESOLUTION EC/74/1

The Symposium on Economic Problems of the Rational Exploitation of Mediterranean Fishery Resources

Considering that training is a crucial element in the rational development of Mediterranean and Black Sea fisheries,

Further considering that this training should embrace all fishery activities and cover, in particular, management and administration,

Noting that, in general, individual countries are not equipped to treat all aspects of fisheries training and that training on a regional or sub-regional basis would avoid duplication

Recommends that the GFCM

- assess the possibility of adapting existing training facilities in the area to serve regional or sub-regional interests in this matter
- investigate sources of finance to support the consequent development of such facilities
- encourage Member Governments to make the fullest use of these facilities for the training of their fisheries personnel
- give its support in scientific, technical, and other appropriate fields

III. REVIEW OF PRESENT MANAGEMENT ACTION IN THE MEDITERRANEAN AND BLACK SEAS

17 In introducing this item, reference was made to studies already carried out in the Mediterranean, both at national and regional levels, and in particular to the synthesis presented in the Report of the Meeting on Fisheries Management in the Western Mediterranean, Rome, 18-19 April 1973 (GFCM/XII/74/6). The attention of delegates was also drawn to a detailed review of existing legislation in the field of fisheries management in member countries prepared by the Secretariat for the Symposium, given in document GFCM/EC/74/6.

18 Available stock assessments indicate that some Mediterranean stocks are overfished. This is the case of demersal stocks distributed along the European coasts which, because of their very high unit value and the extent of their exploitation, account for a very important part of the absolute value of Mediterranean production. No increase in yield from these stocks is to be expected from more intensive fishing. On the contrary, reduction of fishing would lead to a significant decrease of total costs, while annual yields would remain comparable or even slightly higher. In some cases a reduction of fishing effort would produce significantly increased yields. A recent analysis of the economic situation of the trawl fishery in the Adriatic showed that some fleets are reaching the level of zero profit.

19 The substantial benefits to be derived from a reduction of fishing effort are of particular significance in the Mediterranean fisheries where productivity, and thus yields, are as a whole lower than in other areas of the world; by improving profitability, such measures could only make fishing more attractive and therefore more competitive vis-à-vis other economic activities. Even for fisheries which are not fully exploiting the available potentials, it would be advisable to introduce as soon as possible measures by which, when need arises, a brake can be applied progressively to the expansion of fleets. This would avoid the economic waste and social difficulties emerging when the catching capacity has to be reduced.

20 It was noted in this respect that, when planning investments, proper attention is not always paid to the limitations imposed by the resource potentials. In that respect, exchange of information between countries exploiting the same stocks would be most useful when an expansion of fishing is considered, as well as collaboration in the exploitation of these resources. Without such precautions, it is almost certain that the inputs to the fishery would rapidly exceed the resource potential.

21 Several participants reported on measures recently introduced in their countries with the purpose of controlling, either directly or indirectly, the size of the fleets. Methods included a reduction or withdrawal of credit facilities or a reduction in the permitted number of days or hours fishing. The introduction of this latter measure resulted in addition in an improvement in fishermen's living standards. It was also noted that although some fisheries in economic difficulties have sometimes to be subsidized temporarily, such aid should be used purposively to divert the excess fishing effort to underexploited stocks in order to progressively overcome the causes of these difficulties.

22 The size of a stock can be controlled by limiting the rate of removal but profitability of the fishery in the long run can only be assured by controlling the size of the fleet; however, significant increases in annual catch and yields can be achieved by controlling the size of fish caught. Such improvements can be attained through regulations in mesh size, by using selective types of gear, by prohibiting fishing in seasons and areas where undersized fish is particularly abundant, with possibly as a complementary measure, the enforcement of minimum sizes at landing. As regards mesh size, attention was drawn to the practical difficulties encountered in the standardization of mesh measurements and in the enforcement of regulations. Furthermore, because several species are caught simultaneously, it is not possible in practice to fish each of them individually with the most appropriate mesh. The mesh to be adopted can only be a compromise aiming at providing a better yield for all the species taken as a whole; some reduction in yield and catch rate is therefore inevitable for the smaller species.

23 A review of national legislations regarding the size of fish caught shows that, although member countries independently formulated their measures, there are substantial similarities. For example most countries have adopted a minimum mesh size of about 40 mm (stretched) for trawls used for fin fish fisheries. However, much of the legislation suffers from complexity, which does not facilitate its effective enforcement.

24 Results of selectivity studies carried out by the Israeli trawl fishery indicated that 50 mm mesh size is most appropriate for Upeneus molluccensis and Mullus barbatus[1]. This figure should be compared to the one of 40 mm, recommended by the GFCM at its Eleventh Session for fin fish trawl fishing in the Western Mediterranean (Resolution XI/72/2) and already applied in several countries of the Eastern Mediterranean, such as Lebanon. Considering the great similarities of resources and fisheries and the interrelationships between the various fisheries in the Mediterranean, requirements regarding mesh size should also be rather similar throughout the Mediterranean basin. Furthermore, national legislation in this field is not everywhere properly enforced, and this affects its efficiency and

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1/ Gilat, E., 1961 On the selection of Upeneus molluccensis and Mullus barbatus by trawl codends in the Israeli fisheries. Proc.gen.Fish.Coun.Medit., 6:93-106

credibility. It would therefore be most useful as a first step to start really effective enforcement of a minimum measure common to all the countries. At the same time, member countries should make efforts to improve the efficiency of their national enforcement systems since this is a prerequisite for the application of appropriate regulatory measures.

25 Given the existing situation, participants in the Symposium agreed on the following resolution for the approval of the GFCM:

RESOLUTION EC/74/2

The Symposium on Economic Problems of the Rational Exploitation of Mediterranean Fishery Resources

Recognizing

- the need to strengthen the application of regulatory measures

- the interest to harmonize national legislation concerning mesh size regulations and to identify methods most appropriate both for standardized measurement and for the control of mesh sizes authorized in trawl fisheries

- the need to adopt uniform regulatory measures for fishing operations in international waters,

Aware at last that practical difficulties faced in the implementation of mesh size regulations could be more easily overcome by making full use of experience gained in this field in other areas of the world, especially in the North Atlantic

Unanimously calls upon the GFCM to prepare a draft which would serve as a basis for national legislation on mesh size for trawl fishing in the Mediterranean, including definitions of the methods for mesh size measurement, the rigging devices banned, and procedures to be used for control at national level, as well as a proposal for the control of mesh size in international waters

Recommends that this draft, when approved by the GFCM, be addressed to Member Nations for implementation.

26 Finally, it was underlined that insufficient information on the state of the resources and the fisheries in the Mediterranean seriously hampered formulation of regulatory measures. In that respect, training of fishery experts should be strengthened and efforts made to ensure better use of existing expertise. Some participants reported on progress achieved in that field in their respective countries for instance, to strengthen coordination between various experts and institutions concerned. It was recorded that it is the state and trends of fisheries, and not the amount and quality of information available, which determine the appropriate time for taking decisions on management. Therefore insufficient knowledge is an inadequate reason for delaying the taking of decisions. When the scientific bases are not accurate enough, it may be necessary to adopt experimental or preventive measures which have to be modified progressively as the situation is better understood.

IV. MARKETING ASPECTS OF A MORE RATIONAL EXPLOITATION OF FISHERY RESOURCES

27 The Symposium considered the trade and marketing aspects of a more rational utilization of Mediterranean fishery resources, separately for demersal and pelagic species.

28 As regards demersal species generally, there were no great problems in marketing the product, usually in fresh form. Some countries had encountered difficulties in getting consumer acceptance for frozen fish, since fresh fish was generally preferred; however, in most countries of the region these difficulties had been overcome. For demersal fish there was a general insufficiency of supplies, and the problem was to limit fishing effort and to avoid that rapidly rising prices for these species would lead to further expansion of fishing and thus endanger stocks which partly are already overexploited. There nevertheless existed possibilities of improving distribution infrastructure in order to even out considerable regional price differences, both within some countries and between different countries of the region.

29 The principal marketing problems were in the field of the smaller pelagic species, such as sardine, anchovy and horse mackerel, although it was evident that conditions vary considerably between countries. In some countries, e.g. Tunisia and Yugoslavia, present supplies cannot satisfy the demands of both the fresh fish market and the canning industry, which in Tunisia was evidenced by the relatively low rate of utilization of canning capacities and in Yugoslavia had led to a change from a net exporter to a net importer of fishery products. In other countries, e.g. in Italy, pelagic species were in oversupply, particularly during certain seasons. While to some extent the product, usually in frozen form, is channelled into the export trade, e.g. to Spain and France, there was general agreement that some further efforts are required if the existing resource potential is to contribute substantially to satisfying fish demand in the area.

30 In order to extend the storage life of pelagic fish marketed in fresh form, improvements in fish handling and preservation methods were required in most countries, although it was noted that in some countries, e.g. Bulgaria and France, the fresh fish is distributed over the whole territory. The Symposium noted with great interest the experiments with mechanically refrigerated sea-water preservation carried out in Spain and noted that similar trials had been carried out before under the auspices of the GFCM. The application of this technique, particularly to small-boat fisheries, could contribute substantially toward improving shelf-life of the fresh product and thus permitting its wider distribution into inland districts. It was also mentioned that chilled sea-water was used in some countries for the effective preservation of fish on board vessels.

31 It was also stressed that the lower consumer preference for pelagic fish, prevailing in a number of countries, has to be overcome by intensified promotion and consumer education programmes. In this context the meeting heard with great interest about the concerted efforts undertaken in Bulgaria to introduce new species and the successful outcome demonstrated in a rise of the per caput fish consumption from 1.5 kg in 1963 to 7.6 kg in 1972. It also noted the interesting work undertaken in Israel by the Fish Promotion Board, which had resulted in the introduction of a new species and products and which will continue, based upon the results of a survey of fish consumption behaviour, which were submitted to the Symposium.

32 The Symposium devoted some discussion to the possibilities of the manufacture and market introduction of new products from pelagic fish, such as minced or hydrolyzed products, but it was generally felt that the Mediterranean consumer preferred fish in its natural form and that therefore efforts should rather concentrate on marketing it as fresh and/or frozen fish. The product should, however, be improved toward the convenience type of preparation and it was suggested that a frozen sardine, headed, gutted and cleaned, packed in 1/2 or 1 lb polythene bags, could be a first step toward widening the marketing and acceptability of this species in some countries. The Symposium recommended that the GFCM study the technological and logistical aspects of preparing a high quality frozen sardine pack.

33 The Symposium also considered the problem of capacity underutilization prevailing in most canning industries in the area. It was noted that in some countries frozen raw material is used to an increasing extent to fill supply gaps and to even out seasonal catch and price fluctuations. It was suggested that this method be more widely applied.

V. ADOPTION OF THE REPORT

34 The report of the Symposium, to be submitted for the approval of the Twelfth Session of the GFCM, was adopted on 9 March 1974.

Appendix 1

AGENDA

1. Opening of the Symposium
2. Adoption of the Agenda and arrangements for the Symposium
3. Perspectives for fisheries development to 1985 in Member Countries
4. Plans and policies for fisheries development in Member Countries
5. Review of present management action in the Mediterranean and Black Sea
6. Marketing aspects of a more rational exploitation of fishery resources
7. Conclusions and recommendations for further action
8. Adoption of the Report

ANNEX E

REPORT OF AN AD HOC JOINT MEETING OF THE WORKING PARTY ON FISHERY STATISTICS AND THE WORKING PARTY ON RESOURCES APPRAISAL AND EXPLOITATION

(Varna, Bulgaria, 13-14 March 1974)

INTRODUCTION

1 The Working Parties on Fishery Statistics and on Resources Appraisal and Exploitation held a joint meeting during the course of the Twelfth Session of the GFCM; participants to the Session with specific interest in the subject matter were also invited to participate in the meeting. Those who attended, not necessarily for all items, were:

Mrs. K. Alexandrova, Mrs. K. Dogan, Mrs. V. Gorvena and Mrs. R. Muzinić; C. Allain, A. Azouz, C. Bas Peired, M. Ben Kheder, Z. Ben Mustapha, G. Bombace, A. Demetropoulos, A. Elkhatib, C. Froglia, L. Ivanov, E. Juste, A. Kostopoulos, T. Marinov, J. Masip Cosin, M. Massuti Oliver, C. Maurin, C. Piccinetti and S. Tunali; L. Butler, M. Ruivo and J.P. Troadec (FAO).

I. MEDITERRANEAN AND BLACK SEA STATISTICAL AREA[1/]

2 The proposal by the GFCM Secretariat to revise the boundary between Subarea 1 (Western) and Subarea 2 (North Western) was accepted and, further, the working parties proposed that the boundary between Subarea 2 (North Western) and Subarea 3 (Sardinia) be changed. The new boundary of Subarea 2 (North Western) will consequently commence at a point on the coast at the eastern end of the frontier between France and Spain, then run along a rhumb line to the position 41°20'N and 8°00'E and from there northward along a rhumb line to the coast at the Franco-Italian frontier (see Appendix 1, page 51).

3 It was also agreed that consideration be given to altering the boundary between Subarea 5 (Central) and Subarea 6 (Aegean) to facilitate the task of the National Statistical Service of Greece in reporting catch data broken down by subarea. It was finally decided that once this last problem is settled, the agreed subarea classification should not be disturbed for at least five years to permit the establishment of statistical time series.

II. LIST OF SPECIES FOR STATISTICAL PURPOSES[1/]

4 The working parties recommended that, following changes in the presently existing list which is given in FAO Fisheries Circular No. 471 (Preliminary) Mediterranean and Black Sea Area 37 - GFCM, Classification of Aquatic Animals and Plants for Statistical Purposes, Rome, October 1973:

1/ Working documents provided were:

1	GFCM/ST/34	A standard reporting system
2	GFCM/ST/34, Add. I	Further notes on a standard reporting system
3	GFCM/ST/34, Add. II	Comments received on "A standard reporting system"

(i) Statistics should be requested for Trachurus spp., and T. trachurus should no longer be listed separately

(ii) Statistics should be requested for Mullus spp., and M. barbatus should no longer be listed separately

(iii) Statistics should be requested for Sardinella spp., and S. aurita and S. maderensis should no longer be listed separately

(iv) Clupeonella delicatula should be transferred from Diadromous Fishes (Division 2) to Marine Fishes (Division 3).

It was also recommended that the list, once established, should be held firm for at least five years.

III FISHING CRAFT STATISTICS[1/]

5 Discussion took place on three classifications of fishing vessels, one with regard to method of propulsion, another with regard to vessel size (tonnage classes) and a third with regard to method of fishing employed.

(a) Classification by method of propulsion

6 It was agreed that the following classification was sufficient for the fisheries of the GFCM area:

1. Powered craft
2. Non-powered craft

(b) Classification by vessel size

7 It was agreed that the grouping of vessels into tonnage classes was of little value and that work should be undertaken to establish vessel size classes using the horsepower of main engines as the control characteristic.

(c) Classification by method of fishing

8 It was agreed that the following classification should be used for the fisheries of the GFCM area:

1. Trawl
   - 1.1 Bottom
   - 1.2 Midwater
   - 1.3 Mixed bottom/midwater
2. Surrounding nets (purse seine, lampara, alaman, kannizzati, etc.)
3. Mixed purse seine/trawl
4. Others

1/ Working documents provided were:

1	GFCM/ST/35	Fishing craft statistics
2	GFCM/ST/35, Add. I	Further notes on fishing craft statistics
3	GFCM/ST/35, Add. II	Comments received on "Fishing craft statistics"

IV REGIONAL BULLETIN OF STATISTICS[1/]

9 The working parties welcomed the fact that in future a regional statistical bulletin would be published regularly, presenting catch by species and country, and also drew attention to the need for the introduction of certain improvements in, for example, the correct naming of species. The working parties were also of the view that an attempt, as proposed by the Secretariat, should be made to increase the usefulness of the bulletin by including tables showing the catch for a limited number of important species (see Appendix 2, page 53), by sub-area, on the lines of the example presented as a supplement in the cited working document.

V FISHING EFFORT STATISTICS

10 It was agreed that the Secretariat should commence developing a system for the standardized reporting of fishing effort statistics by the national offices to the Secretariat.

VI APPRAISAL OF RESOURCES

11 The participants filled out as far as possible the tables on catches and on catch and efforts prepared during previous meetings of the Working Party on Resources Appraisal and Exploitation. These data, supplemented by information from the participants, were quickly studied.

(a) Spanish and French coasts

12 Judging from the available information, the state of exploitation of the stocks does not appear to have changed significantly from that described in the report of the third session of the working party.

(b) Adriatic

13 The data collected and unpublished information provided by Miss Muzinić and Messrs. Kacić and Piccinetti were reviewed.

14 The total catches of pelagic species by the Italian and Yugoslav fleets have increased during the last three years. A comparison of yields simultaneously obtained by Italian and Yugoslav vessels reveals a fairly loose relationship between the two fisheries. Actually, the fishing efforts of the two fleets are known to be distributed quite differently in regard to regions, seasons and species sought. While sardine and anchovy catches have risen appreciably, those of mackerel have distinctly dropped. This could be the result of inversely related fluctuations observed in the abundance of these two groups of species (Muzinić). The data on effort are unfortunately too fragmentary to permit an appraisal of the state of exploitation of the various stocks. Nevertheless, it is thought that only a fraction of the potential catch is actually caught and that observed variations derive at least as much from natural fluctuations in the abundance of species as from effects induced by fishing. These hypotheses accord with the conclusions of the symposium held at Split (Yugoslavia) in 1972, based on acoustical measurements (Stirn) and on appraisal of spawning stocks (J. Karlovac et al.).

15 In regard to demersal stocks, total Italian catch and yields rose in 1971 and 1972 after having declined from 1967 to 1970. This reversal of trend is also observable for certain species such as European hake and Norway lobster in the Yugoslav as well as in the

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1/ See working document GFCM/XII/74/8 Addendum 1

Italian fishery. Conversely, mullet yields diminished. These variations are felt to result, at least in part, from natural year-to-year fluctuations in the abundance of the species. The lack of satisfactory data on fishing effort makes it very difficult to analyse the effects of fishing on stocks.

(c) Tunisia

16 The work done by INSTOP at Salammbô in collaboration with the UNDP/FAO project in this country indicates that there is room for some expansion of trawl fishing on the Tunisian continental shelf. A production increase should result from intensified fishing in areas deeper than those now currently fished and off the northern coast of the country. The shrimp stocks also appear to hold out interesting prospects. The profitability of fishing operations could be improved by lengthening the duration of trips, which would make for shorter periods of idle time.

17 Echo-acoustic surveys now in course of interpretation show that the Tunisian fleet is still working only a marginal part of the area of distribution of available pelagic stocks. In this area catches have increased only slightly compared to the increase in the number of trips made in the last few years. Still, echo-acoustic surveys indicate that it should be possible to increase current production very appreciably. It is possible that the data of catch and effort in the Tunisian fishery - which relate only to the part of the distribution area of the stocks lying closest to the coast - do not correctly reflect the present state of exploitation of all stocks.

(d) Trawl selectivity

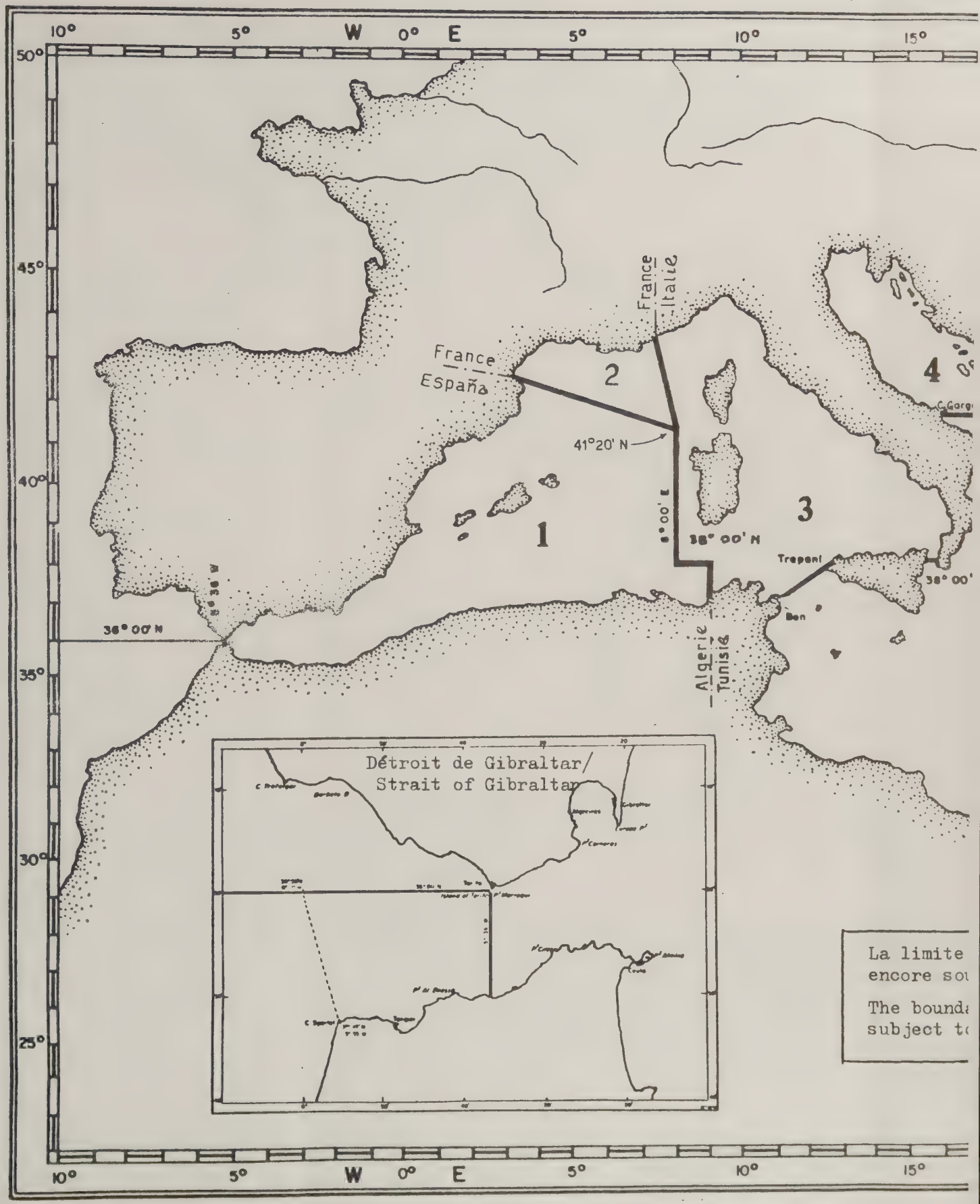
18 The results of selectivity experiments with Italian trawls (the classical and the "rapido") and the French high opening bottom trawl were reported by C. Froglia4/. The trials were held in the central Adriatic and related to the following species: mullet, European hake, common sole, horse mackerel, whiting, bib and scaldfish. Knotted and unknotted polyamide trawls of different meshes were used. Greatest attention was given to mullet: a selection factor of 2.1 (weighted average) was found for unknotted polyamide trawls.

19 The role of factors other than mesh size in the selectivity of these trawls was brought out:

- for all species except flatfish the selection factor is lower for unknotted than for knotted polyamide trawls,
- the quantities and nature of certain trash benthic organisms in the catch affect the opening of the meshes and hence the selection factor,
- increasing the circumference of the cod-end reduces trawl selectivity,
- the size composition of catches can affect selectivity, particularly for mullet. No satisfactory explanation has yet been found for this observation.

4/ M. Ferretti and C. Froglia, 1974 - Results of selectivity experiments made with different trawls on more important Adriatic demersal fish - Laboratorio di tecnologia della pesca (CNR) - Ancona, Italy.

ZONE STATISTIQUE MEDITERRANEE
(voir cartouche po
MEDITERRANEAN AND BLACK SEA
(see inset f



Sous-zones
Sub-areas

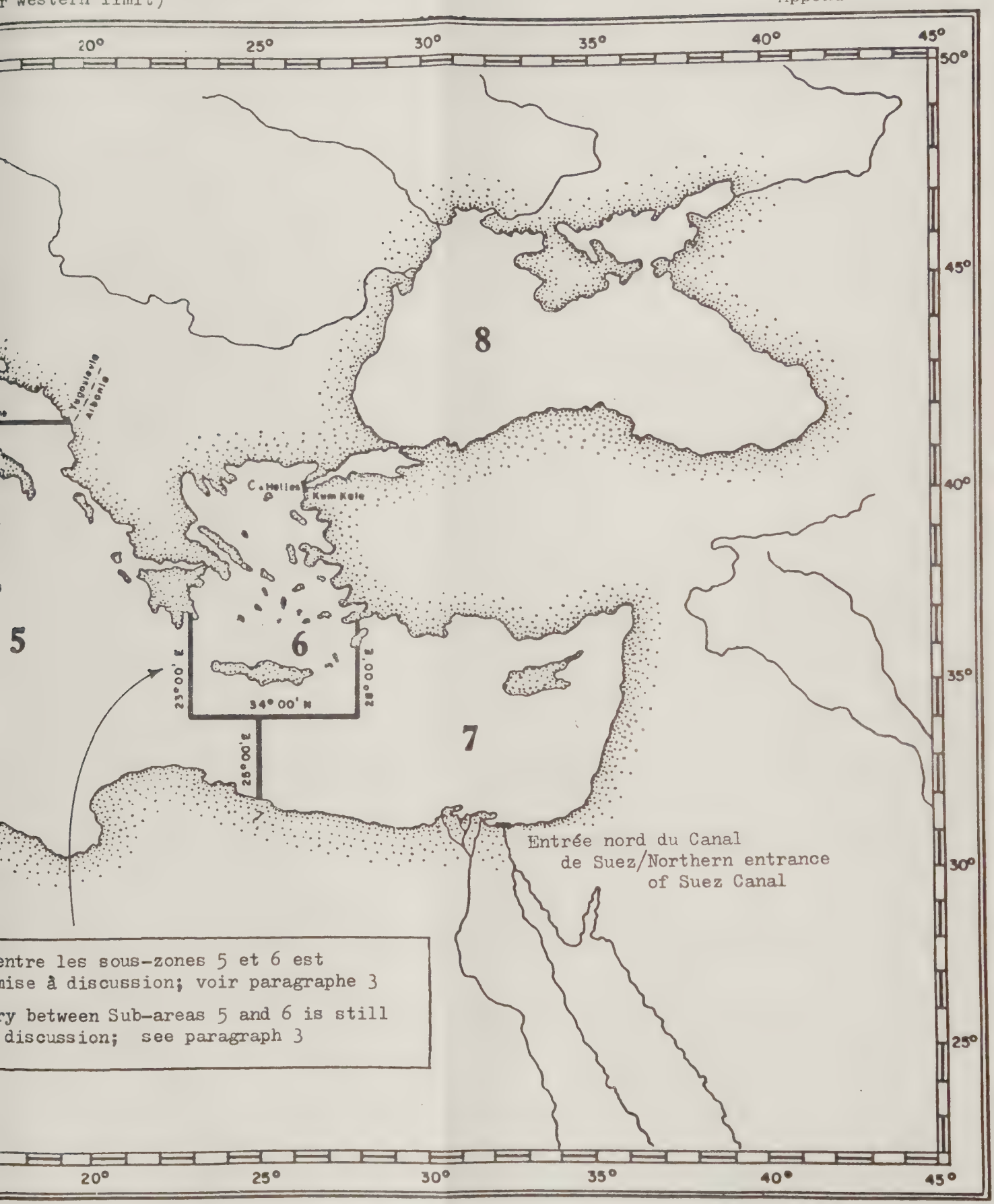
1 Occidentale/Western
2 Nord-occidentale/North-western
3 Sardaigne/Sardinia
4 Adriatique/Adriatic
5 Centrale/Central
6 Egée/Aegean
7 Levant
8 Mer Noire/Black Sea

ET MER NOIRE DIVISEE EN SOUS-ZONES
r la limite occidentale)

STATISTICAL AREA BY SUB-AREA
r western limit)

Appendice 1

Appendix 1



entre les sous-zones 5 et 6 est
mise à discussion; voir paragraphe 3

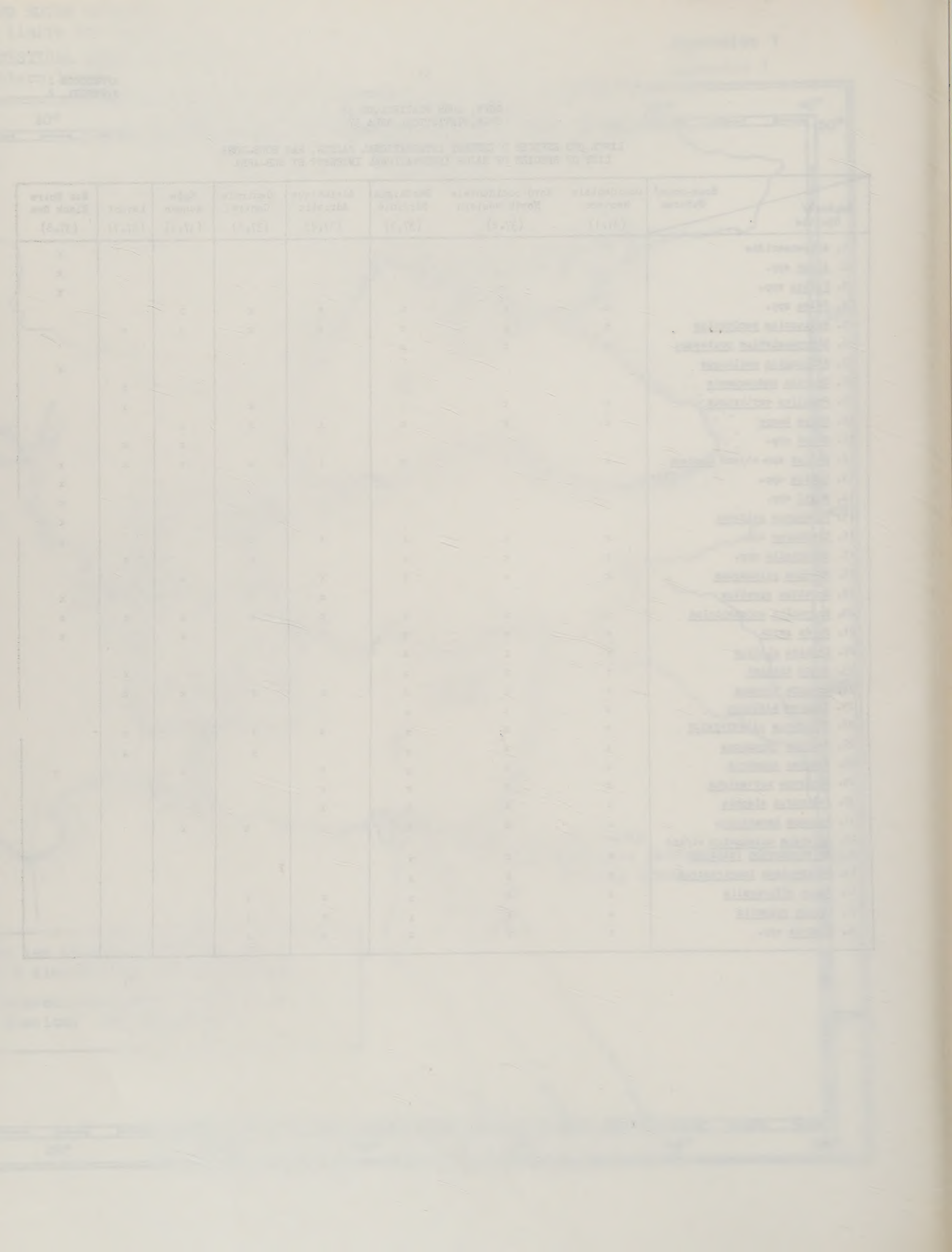
ry between Sub-areas 5 and 6 is still
discussion; see paragraph 3

APPENDICE 2
APPENDIX 2

CGPM, ZONE STATISTIQUE 37
GFCM, STATISTICAL AREA 37

LISTE DES ESPECES D'INTERET INTERNATIONAL MAJEUR, PAR SOUS-ZONE
LIST OF SPECIES OF MAJOR INTERNATIONAL INTEREST BY SUB-AREA

Espèces/ Species \ Sous-zone/ Subarea	Occidentale Western (37.1)	Nord occidentale North Western (37.2)	Sardaigne Sardinia (37.3)	Adriatique Adriatic (37.4)	Centrale Central (37.5)	Egée Aegean (37.6)	Levant (37.7)	Mer Noire Black Sea (37.8)
1. Acipenseridae								x
2. Alosa spp.								x
3. Psetta spp.								x
4. Solea spp.	x	x	x	x	x	x		
5. Merluccius merluccius	x	x	x	x	x	x	x	
6. Micromesistius poutassou	x	x	x					
7. Merlangius merlangus								x
8. Saurida undosquamis							x	
9. Pagellus erythrinus	x	x	x		x		x	
10. Boops boops	x	x	x	x	x	x		
11. Maena spp.						x	x	
12. Mullus spp. et/and Upeneus spp.	x	x	x	x	x	x	x	x
13. Gobius spp.								x
14. Mugil spp.								x
15. Pomatomus saltator								x
16. Trachurus spp.	x	x	x	x	x			x
17. Sardinella spp.	x	x	x		x		x	
18. Sardina pilchardus	x	x	x	x		x		
19. Sprattus sprattus				x				x
20. Engraulis encrasicolus	x	x	x	x	x	x	x	x
21. Sarda sarda	x	x	x			x		x
22. Xiphias gladius	x	x	x					
23. Auxis thazard	x	x	x				x	
24. Thunnus thynnus	x	x	x	x	x	x	x	
25. Thunnus alalunga	x	x	x					
26. Euthynnus alletteratus	x	x	x	x	x		x	
27. Scomber japonicus	x	x	x		x		x	
28. Scomber scombrus	x	x	x	x		x		x
29. Nephrops norvegicus	x	x	x	x				
30. Palinurus elephas	x	x	x	x				
31. Penaeus kerathurus	x	x	x		x	x		
32. Aristeus antennatus et/and Aristeomorpha foliacea	x	x	x					
33. Parapenaeus longirostris	x	x	x					
34. Sepia officinalis	x	x	x	x	x			
35. Loligo vulgaris	x	x	x	x	x			
36. Eledone spp.	x	x	x	x	x			



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